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Making Rating-Scales Work
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Making Rating-Scales Work

By Forrest A. Kingsbury, *University of Chicago*

To yield reliable results rating-scales must be adapted to circumstances. The best method of rating is not the same everywhere, but depends on the particular needs of each organization and on the supervisors who make the ratings. Statistical refinements must frequently be sacrificed for practical reasons. Dr. Kingsbury believes that rating-scales are useful tools, worthy of further study and improvement, rather than abandonment because of present imperfections.

THE construction of a rating scale for personal qualities in an industrial personnel group presents a variety of perplexing problems. Of these, the most crucial and the most baffling is that of so defining the terms or symbols in which the quantitative gradings are expressed, that they shall be not merely theoretically defensible but practically reliable. It is this quantitative grading, of course, which alone justifies the use of the term "scale."

In the effort to accomplish this end, many types of scale have been proposed and used. Rankings, man-to-man scales, definitions based on quartile, decile, percentile, or other fractions of the group, descriptive adjectives and phrases, either "colorful" or "colorless," graphic scales, devices and schemes in bewildering variety, confront the adventurer into the personnel-rating field.

Which of these methods is best? Certainly, until a good deal more scientific inquiry has been made into the relative reliability of ratings made by each of these methods, a final answer will not be forthcoming. But there are certain a priori considerations that should not be overlooked. It is the purpose of this paper to point out some of these, and to defend the answer that *there is no one best method.* The form which yields the most reliable ratings will vary with the circumstances under which the ratings are made and used; and these circumstances will vary with the type of organization, its peculiar conditions and needs, and the individuals who make the ratings.

Shortcomings of Certain Scales

A concrete example of this principle is found in one office where experiments in personnel rating have been going on for about four years. This is a highly departmentalized office organization of about 1700 employees in about 350 distinct jobs or job-groups. Several rating scales, as well as informal personnel reports, have been used, incorporating in one way or another several of the devices men-

tioned. Among these are the graphic and the numerical methods of expression, the man-to-man scale, colorful adjectives, the normal probability curve, etc. The work has been guided throughout by the principle, which early proved of prime importance, that one essential part of a rating-scale program is to analyze the ratings and to give prolonged personal instruction and supervision to all raters.[1]

Repeated conferences with managers and assistant managers of more than forty departments, as well as analysis of their ratings, have made clear certain facts. The man-to-man scale fails to yield reliable results. Managers do not agree on representative "5" employees or "2" employees. They do not take the very considerable amount of time necessary to operate this system. They do not know details of work or workers outside their own department, or a few closely related departments. Carefully chosen descriptive adjectives and phrases are found to be ambiguous and to have different practical significance in different departments. Divisions of the distribution curve, whether of frequency surface or of base-line, are wholly foreign to the managers' ways of thinking; and while they can be and are used as a check upon the ratings already made, they rarely serve as helpful guides in the original assignment of ratings. Standards of satisfactory performance vary considerably between those departments having mainly routine work and little individual responsibility and those departments with varied duties and high individual responsibility.

[1]Discussed in "Analyzing Ratings and Training Raters," Journal of Personnel Research, December, 1922-January, 1923. Vol. I, Nos. 8 and 9, pp. 377–383.

CLARIFYING THE CONCEPTS OF RATERS

These conditions, then, have led to the evolution of definitions of the five degrees used, in terms which accord with those in which managers habitually pass judgment upon their subordinates, in terms of standards peculiar to each department, and in terms of use. The following definitions have been found not only practical, comprehensible, and reliable, but theoretically defensible.

The central rating of "3," or average, is defined as meaning that the employee "meets reasonably satisfactorily the recognized departmental standards in respect to this trait." Every manager knows exactly what this expression means. It helps to impress upon him that a rating of "3," or "average," is in no way a slur, but is the normally expected rating, and that it is the 4's and 5's, the 2's and 1's, which are departures from the normal.

A "2" rating means that the employee is "deficient enough in the trait under consideration so that he has had to be warned, criticized, or otherwise spoken to about it." This again constitutes a perfectly objective and reliable criterion of moderate deficiency. It is explained that this does not mean threatened dismissal, but is merely a warning signal, to keep the employee under observation. The manager is directed to account for all "2" ratings by indicating whether they mean inexperience or some other cause.

A "1" rating means that the employee is so seriously deficient in the trait that, if it is an important one, he is under consideration for transfer or dismissal.

Of the two superior ratings, "4" is defined as meaning that the employee "stands out above the general run of the employees of the department in respect to this trait." When asked to name the outstanding employees, the names which occur to the rater without hesitation are almost invariably those of the "4" and "5" men.

A "5" rating means that the employee stands out so conspicuously from even the "4" men that he ought to be distinguished from them. They are, of course, few and readily recognized and are ordinarily candidates for early advancement.

The total estimate of each employee is summarized in a single rating on "General suitability for the particular position held." This is always checked against the ratings on separate traits, and especially those indicated as of primary importance for that position.

Two facts are impressed upon every rater; first, that it is the employees who rate above average or below average that are of most direct concern to the institution, the former because they are potential promotional material, the latter because they suggest some failure in selection, placement, training or supervision; and second, that those above average or below average are fewer in number than the average, just because they represent exceptions and not the general rule.

To the psychologist and statistician these facts are, of course, elementary. But they are not elementary to most business executives. To infuse these principles successfully into the thinking of a group of raters is to go far toward solving their problem. And to do this demands a program of more patient and intensive training of individual raters than is usually practiced.

TRAINING PROGRAM FOR RATERS

Used in conjunction with a thorough-going analysis and training program, these definitions are yielding ratings in which increasing reliance is placed. This program includes several steps: a carefully worded raters' manual (now in its third revision); analysis of each set of ratings and detailed comparison with the same rater's previous ratings; the use of several devices for checking their validity and reliability, and personal interviews with each rater at which his ratings are reviewed, his general faults pointed out to him, individual cases discussed, and apparent contradictions cleared up. This sequence has been carried out three times, and is to be repeated, so far as is necessary, twice each year. The resulting ratings have been found to be practicable for all departmental needs, including certain research purposes in which each department is taken as a unit.[2]

When used for comparison with ratings or requirements in other departments, certain adjustments are

[2] For a more detailed description of this program see "The Principles Involved in Securing Service Ratings as Exemplified in a Large Bank," Public Personnel Studies, March, 1925.

found to be necessary, because standards of satisfactory performance do vary materially between some of the larger, more routinized departments where relatively inexperienced and untrained employees predominate, and a few departments of central importance into which the cream of the staff tends to become concentrated. This is an obstacle more apparent than real, since interdepartmental adjustments are always made by one or another of several responsible central executives who know very definitely the differences between departmental standards, and could, if necessary, describe those differences clearly on paper. Moreover, certain statistical methods for ascertaining such interdepartmental differences and weighting the ratings accordingly are being worked out. It is not too much to say that the problem of obtaining reliable ratings in this organization seems, as a consequence, to be more definitely in prospect of solution than it has been at any previous time.

This rather extended description will serve to illustrate the principle that the practically successful rating program must be a direct outgrowth of the specific situation, with its peculiar conditions, limitations, and needs, and not a system imposed arbitrarily from outside, no matter how successful that system may have proved elsewhere, or how sound, statistically and psychologically, it may be.

SCALES MUST BE ADAPTED FOR USE BY NON-EXPERTS

A moment's reflection will make it clear that most rating-scales in business houses have their principal use at the hands of executives without scientific training in psychology or statistics. Even where supervised by technical experts, the actual work of making the estimates, and much of their practical utilization, falls to non-experts. Their use in statistical research is only one, and usually a minor use. It is precisely here that some theoretically sound rating systems fail to make good. Often these programs demand of executives ways of thinking wholly foreign to their habits of judgment. This is especially true of those methods which involve comparing each individual employee with, and placing him in a position relative to, a representative group. Few executives think naturally in quantitative terms about personal traits; still less do they think in terms of the frequency of appearance of the various amounts of these traits in a group of people. It is not enough to say they *ought* to think in such terms. No matter how excellent a program of instruction and training in rating is practiced, there will always be some who fail to reorganize their methods of judging to conform to a prescribed system.

It seems probable, therefore, that the "best" form of rating-scale in any given case will prove to be one which, whatever be its exact nature, is at least conformable to the habits of judgment which the rater uses in his own situation, and to the habits of description and definition which serve as his most natural mode of communicating his opinions to others who have to act upon them. "Conformable to," it should be noted, does not

mean "identical with"; it does not mean that ratings ought to be expressed in the business man's crude and ambiguous terminology; that would mean virtually abandoning the attempt to make them scientific. But they can and ought to be readily translatable into and out of terms and modes of thought to which the rater concerned is accustomed. Instead of setting up an ideal system and endeavoring to force raters to adjust themselves to it, we should first of all endeavor to comprehend the rater and his organization as we find them, and to see whether his own crude yet often effective methods cannot be made over into a passably reliable instrument.

Since raters, situations, and anticipated uses vary, it is to be expected that methods found highly satisfactory and reliable in some places will fail to yield satisfactory results elsewhere. As with the standardization of selective tests, so with rating-scales; an apparently minor difference between two situations may make a good deal of difference in the details of the device best suited to each particular problem. A school principal called upon by a university to rate certain of his graduates in terms of their relative location in a typical group of high-school graduates, may be able, because of his particular training, to do so effectively. A business executive, on the other hand, may be wholly at sea if called upon to perform an analogous task. A set of definitions of degrees which yields reliable results in one kind of a business organization may be very unreliable in another where the standards, uses, raters, or organization are different.

PRACTICAL CONSIDERATIONS IN THE ADAPTATION OF SCALES

Conditions which may modify the rating practices in different institutions and help to determine the most practicable type of scale are numerous. Among them, however, the following may be mentioned:

1. Whether or not each executive who makes ratings has had practice in thinking of individuals as distributed along a scale with reference to the amount of a given trait they manifest.

2. The terms which the rater habitually employs in thinking to himself or describing to others a superior, average, or inferior degree of performance.

3. The objective criteria which are used in judging the normality, superiority, or inferiority of any individual's performance.

4. The list of traits chosen to be rated and the way in which they are defined.

5. Whether or not the rater has a wide and intimate knowledge of men and work outside his own immediate group with which he can reliably compare his own subordinates.

6. The relative adequacy of the program and methods of training raters.

7. The number of executives who can make ratings on the same individuals.

8. The extent to which standards of satisfactory performance with respect to any given trait vary from one department or shop to another within the organization.

9. The use which is to be made of the ratings, whether primarily for research purposes or for the ordinary

routine of maintenance, such as promotion, transfer, discharge, and salary adjustment.

10. Who is to make use of the ratings.

After all, the rating-scale ought to be thought of as a practical administrative device, and not as a scientific measuring instrument. No pretense is here made that ratings are, or give any immediate promise of being, comparable in objectivity or exactness with certain other types of psychological measurement. At the same time, we must insist that their failure to attain the statistician's ideal is no reason why the psychologist should refuse to deal with them. His refusal to contribute what he can toward improving rating practices would not mean the cessation of these practices, but it would mean that rating would continue to be attempted in bungling fashion. Personnel ratings may be unscientific and inaccurate, but in practice they are apparently indispensable, and so far as we can see, will long continue to be so. This itself is the justification for the psychologist's concerning himself with the problems they present.

Assuming, then, that practical needs justify us in continuing the attempt to get personnel ratings which are, if not more scientific, at any rate less unscientific, it would seem wiser for those attempts to start with the actual, practical situation and to move forward from that, than by working backwards from a theoretically ideal but practically unrealizable type of scale. What the practical situation is and necessitates, will require careful preliminary study in each case. It will, as a rule, be found so to vary from one organization to another, that the successful type of scale, when it is found, will be the product of evolution and not an arbitrary installation.

The Justification of Judgments

A Study of Reasons Given by Raters in Support of Their Judgments of Emotionality, Stability and Expressiveness

By Carney Landis,[1] *University of Minnesota*

Are judgments about a person's emotional traits apt to be more valid if the rater can give a reason for his opinion? Can the data upon which intuitive impressions are based be rightly described after the rating is made? Mr. Landis proves experimentally that the reasons given to justify a judgment of this sort have no objective value and do not affect the validity of the ratings.

THE technique of the rating scale method of investigation has been rather thoroughly studied within the past few years. We have seen the rating scale applied to many human traits; there are studies of its reliability and consistency (Norsworthy, Hollingworth); form and method of application (Strong and Hollingworth); formulae to correct for this or that shortcoming; effect of category and form as they affect judgment (Hollingworth); effect of the time interval upon the accuracy of judgment (Henmon); in fact, most phases of the subject seem to have furnished the basis of some investigation. However, careful research has failed to disclose anywhere in the literature a study which considers the *reasons assigned*, why such and such a rating was made, and the classes of ratings for the justification of which various types of reasons are resorted to. We ask Mr. X to say whether Mr. A is emotional, and he replies that Mr. A is a very unemotional individual. Then, moved by further curiosity, we inquire the reason for the judgment and we are told that Mr. A seldom laughs. As a consequence, we draw the conclusion that as a judge of character Mr. X is sadly deficient. Are we justified in such an inference? Does the reason which Mr. X gives after making a judgment, in any way reflect upon the validity of his judgment?

METHOD OF THE INVESTIGATION

During the winter of 1923–1924 the writer carried on a rather extensive experimental investigation of general behavior and facial expression during emotional disturbance.[2] During this

[1] This article was prepared for publication during the writer's tenure as National Research Fellow in the Biological Sciences.

[2] Landis, C.: Studies of Emotional Reactions. II. General Behavior and Facial Expression. Jour. Comp. Psych., October-December, 1924, vol. 4, Nos. 5 and 6, pp. 447–509.

investigation it seemed highly desirable to find some valid criteria of emotionality. This led to the collection of data on each subject, in which as many different sources of information as possible were used. The intercorrelations and relationship of these various factors or criteria have been reported.[3] An obvious method of gaining information concerning the subjects was the rating scale; hence the following form was prepared:

GENERAL INSTRUCTIONS FOR ALL LISTS

You will find here three lists of persons most of whom are known to you. You are to rate these persons according to instructions at the beginning of each list. Omit judgments of any persons with whom you are not acquainted.

Please underscore the names of persons whose rating you feel is influenced by knowledge you may have of their reactions in the experiment on emotions being conducted by C. Landis and R. Gullette. Please do not sign this form as it will be identified by number only. These ratings, so far as any individual is concerned, either as to his own score or as to any particular rater's estimate, will be kept strictly confidential.

Rating No. 1

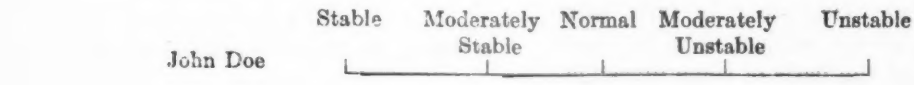
Below is the first list. Please mark (1) after each person you consider very stable emotionally. Mark (2) those moderately stable emotionally and (3) those very unstable emotionally.

Use as your criterion of emotional stability the same that you would use if your were writing a confidential letter of recommendation.

Rating No. 2

Below is the second list. Opposite each name place an "x" at the position on the scale at which you would rate the individual as to emotional stability.

By emotional stability we mean the ability to resist the cumulative effect of emotional situations such as might be employed in experimental conditions. At one *extreme* of the scale we have an unstable individual who would "go to pieces," as the result of a series of emotional shocks, and would take some time to recover normal equilibrium. At the other *extreme* of the scale we have a stable individual who could experience a series of emotional shocks without having the effect of one shock carry over into the next and without having the effect of the whole continue after the end of the last situation. By normal understand an individual who is midway between one whom we have called stable and one whom we have called unstable. By moderately stable or moderately unstable understand an individual who stands midway between normal and the extreme. Make your grading as fine as possible by placing the "x" at such a point on the scale as seems to fractionate his stability best.

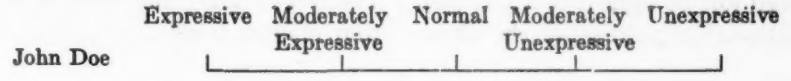


Rating No. 3

Below is the third list. Opposite each name place an "x" at the position on the scale at which you would rate the individual as to expressiveness in emotional situations. An expressive individual is one whose reactions during an emotional situation may be easily and definitely observed without the aid of instrumentation. An unexpressive person would apparently remain unaffected and unresponsive during an emotional situation. A normal individual would rate midway between an expressive and an unexpressive individual. By moderately expressive and moderately unexpressive understand an individual who stands midway

[3] Landis, C., Gullette, R., and Jacobsen, C.: Criteria of Emotionality. Pedag. Sem. (in press).

between the normal and the extreme. Make your grading as fine as possible by placing the "x" at such a point on the scale as seems to fractionate his expressiveness best.



Method of making judgments

After you have finished all your ratings, please go back over each list and in a brief note state the basis upon which you have made your rating; your method of determination of your estimate of the emotionality or expressiveness of each individual.

Write this statement opposite each name in Rating List No. 1 and just above the scale opposite each name in lists No. 2 and 3.

This scale was given to 35 persons, including the subjects, who were asked to fill it out. They were all acquainted with one or more of the subjects and hence could rate on the basis of acquaintanceship, if on no other basis. In working up the material all self-judgments and all judgments admittedly affected by knowledge of the results of the experimental procedure, were omitted from consideration.

Intercorrelations of the ratings

The intercorrelations of the scales and their relation to other criteria, given in another article,[4] are here restated briefly. The rating scale estimate of emotionality, despite the fact that it was only a three-fold classification, gave more significant correlations and a higher average correlation than any other criterion obtained. The rating scale estimate of emotionality correlated +0.90 with that of stability, and −0.67 with expressiveness, showing that the group of judges made little distinction between emotionality and stability and reckoned unexpressiveness very much akin to emotional stability. Using 529 pairs of ratings of stability and expressiveness, a correlation of −0.52, ±0.02, was obtained, showing that unexpressiveness and stability are somewhat allied in the minds of most individuals. The effect of general appearance is shown by the correlations with the height-weight ratio of +0.26, +0.46, and −0.14 with emotionality, stability, and expressiveness, respectively. Amount of laughter or smiling, during the experiment, correlated +0.30, +0.38, and −0.13, while the best objective rating of amount of facial expression correlated +0.23, +0.26, and −0.05 with emotionality, stability and expressiveness, respectively. To obtain some idea of the reliability of these scales, the rankings of the judges were divided into two chance groups of equal frequency, and the average rankings of each group were correlated. This gave +0.76 for emotionality, +0.79 for stability, and +0.86 for expressiveness, indicating a rather high reliability throughout.

Classification of "reasons why"

The classification of any material, so diverse as "reasons why," cannot escape being somewhat arbitrary and a reflection of the categories of be-

[4] Landis, et al., op. cit.

havior in which the classifier believes. In order that this bias might be compensated for, to some extent, the plan was adopted of starting a new classification whenever any "reason" appeared which did not, in the opinion of the investigator, fit easily into the categories already started. This gave a multiplicity of headings at the end of the first classification process. Those containing two or more ratings were allowed to stand. Certain of the single reason classifications, for instance "strong likes and dislikes," were moved into either the category of Emotional Behavior or of General

TABLE 1

Relationship between reasons assigned as bases of judgments of emotionality, stability, and expressiveness, and the rating assigned under each reason

CLASSIFICATION OF REASON ASSIGNED	EMOTIONALITY					STABILITY			EXPRESSIVENESS		
	Number of cases	Per cent of total number of cases	Per cent rated "1"	Per cent rated "2"	Per cent rated "3"	Number of cases	Per cent of total number of cases	Average per cent stable	Number of cases	Per cent of total number of cases	Average per cent expressive
Hunch, guess, snap judgment	61	13	28	62	10	66	19	57	11	3	66
Impression	35	7	43	37	20	49	14	64	38	11	47
General acquaintance	26	5	23	73	4	11	3	60	12	4	64
Observation	50	11	50	46	4	16	5	60	41	12	57
Conversation	17	4	12	65	23	11	3	48	6	2	45
General behavior	60	13	48	43	8	33	9	55	37	11	52
Non-specific	*249*	*52*	*37*	*53*	*11*	*186*	*54*	*58*	*145*	*43*	*54*
Specific type of behavior	34	7	23	44	32	31	9	51	17	5	64
Particular incident or incidents	51	11	24	41	35	35	10	38	43	12	58
Specific	*85*	*18*	*23*	*42*	*34*	*66*	*19*	*44*	*60*	*18*	*62*
Emotional behavior	22	5	23	45	32	14	4	50	7	2	36
Facial expression	3	1	67	0	33	4	1	36	62	19	52
Laughter and smiling	5	1	40	40	20	0	0	0	12	4	57
Eye movements	0	0	0	0	0	0	0	0	3	1	70
Manner of speech, tone of voice	2	1	50	50	0	3	1	20	9	3	31
Emotional factors	*32*	*7*	*31*	*38*	*31*	*21*	*6*	*43*	*93*	*28*	*48*
Intimate contact	15	3	33	47	20	8	2	59	5	2	76
Appearance, physical characteristics	35	7	37	49	14	13	4	61	7	2	50
General attitude of the subject	46	10	43	50	7	44	12	58	10	3	40
Unclassified	9	2	33	44	22	10	3	59	5	2	42
Total number of reasons	471					348			335		
Average percentage			35	49	16			55			55
Total judgments without reasons	70					191			204		
Average percentage			8	88	4			55			58

Behavior. The remainder of these single reason categories were lumped under the heading "Unclassified."

As each reason was classified an entry was made of the accompanying rating, so that an analysis of the effect of the reason upon the rating might be made. Table 1 gives the classifications and the data assembled under each heading. In the compilation of these data, "stable" or "expressive" was regarded as 100 per cent, normal as 50 per cent and unstable or unexpressive as 0 per cent. In the figures opposite "hunch," 57 in the column headed "Average per cent stable" means that the average of all ratings accompanied by reasons classified as "hunch, guess or snap judgment," is 57 per cent on a 100 per cent scale. The average of all emotionality ratings is 38 per cent, of all stability ratings is 55 per cent and of all expressiveness ratings, 57 per cent.

For the sake of clarity each classification is taken up in the following semi-tabular form:

1. *Hunch, guess, snap judgment:*
   Per cent of total number of reasons assigned—12
   Average rating of Emotionality explained by this type of reason, 41 per cent. Differs from average +3 per cent.
   Average rating of Stability explained by this type of reason, 57 per cent. Differs from average +2 per cent.
   Average rating of Expressiveness explained by this type of reason, 66 per cent. Differs from average +9 per cent.
   Points indicated in this tabulation:
   1. Most frequent reason assigned.
   2. Tendency to rate a person normal with regard to emotionality and stability.
   3. Tendency to rate person as expressive.
   Typical reasons:
   "Having only a hunch that she feels and thinks deeply about some matters."
   "Knowing nothing to the contrary, I guess he is normal."
   "Hunch. Hard to say why, can't analyze this, yet feel sure."
   "Might get her rattled; it's a poor guess."
   "Guess. Don't know the reason."
2. *Impression:*
   Per cent of total number of reasons—10.
   Average rating of Emotionality, 39 per cent. Differs from average +1 per cent.
   Average rating of Stability, 64 per cent. Differs from average +9 per cent.
   Average rating of Expressiveness, 47 per cent. Differs from average −10 per cent.
   Points indicated:
   1. Bulk of emotionality ratings are "stable" or "normal."
   2. Ratings tend more pronouncedly toward stability, than any other classification.
   3. Stability is here associated with unexpressiveness.
   Typical reasons:
   "General mpression. This is shorthand for casual acquaintance, or judgment on basis of general impression in everyday situation."
   "Very quiet. Impresses me as one who would go to pieces at anything."
   "His conduct gives impression of perfect control."
   "Impression."
3. *General acquaintance:*
   Per cent of total number of reasons, —4.
   Average rating of Emotionality, 41 per cent. Differs from average +3 per cent.
   Average rating of Stability, 60 per cent. Differs from average +5 per cent.

Average rating of Expressiveness, 64 per cent. Differs from average +7 per cent.

Point indicated:

1. Distinct tendency to rate as normal, or toward socially approved quality.

Typical reasons:

"General acquaintance—means I don't know why I assign this rating."

"Casual acquaintance—no reason for supposing anything unusual in his emotional life."

"Rather slight acquaintance—leads me to think he is sensitive and retiring."

"General acquaintance—vivacity easily mistaken for emotion."

4. *Observation:*

Per cent of total number of reason,—9.

Average rating of Emotionality, 27 per cent. Differs from average −11 per cent.

Average rating of Stability, 60 per cent. Differs from average +5 per cent.

Average rating of Expressiveness, 57 per cent. Differs from average 0 per cent.

Points indicated:

1. Emotionality rating gives more "very stable" judgments than any other classification.
2. Stability and Expressiveness rate approximately at point of general average.

Typical reasons:

"More than casual acquaintance—based on the kind of observation one indulges in when getting acquainted with a person one finds very interesting."

"Observation at times of stress."

"Observed some of her escapades—never known her to be upset."

"Behavior in social situations—never observed signs of undue emotionality."

"Superficial observation."

5. *Conversation:*

Per cent of total number of reasons, —3.

Average rating of Emotionality, 56 per cent. Differs from average +18 per cent.

Average rating of Stability, 48 per cent. Differs from average −7 per cent.

Average rating of Expressiveness, 45 per cent. Differs from average −12 per cent.

Points indicated:

1. Ratings of emotionality are pronouncedly weighted toward "very unstable."
2. Ratings tend to indicate instability and unexpressiveness.

Typical reasons:

"Conversation reveals tendencies toward deep emotional expressions which are fairly well controlled."

"Accounts of thrills."

"Judgment on basis of several conversations, almost intimate in nature."

"On basis of excessive radicalism of a verbal nature."

"Gets excited when talking—would go to pieces."

6. *General behavior:*

Per cent of total number of reasons, —11.

Average rating of Emotionality, 30 per cent. Differs from average −8 per cent.

Average rating of Stability, 55 per cent. Differs from average 0 per cent.

Average rating of Expressiveness, 52 per cent. Differs from average −5 per cent.

Points indicated:

1. Second most frequent reason given.
2. Tendency to judge as very stable on emotionality rating.

Typical reasons:

"Doesn't show any zeal, interest or enthusiasm."

"Restrained in general conduct."

"Seems quiet and calm and very certain of her standing."

"Well poised and self-confident."

"Quick, alert manner."

"Responds easily enough if it doesn't concern him too intimately."

"Eager to be in the thick of the fun—enthusiastic."
"Extremely inconsistent and contradictory behavior, inability to handle inhibitions."
"Utter lack of spontaneity."
"Doesn't assert herself much, not brusque or hard in manner or talk."

Non-specific reasons:

(Summary of classifications 1, 2, 3, 4, 5 and 6 above.)
Per cent of total number of reasons, —50.
Average rating of Emotionality, 36 per cent. Differs from average −2 per cent.
Average rating of Stability, 58 per cent. Differs from average +3 per cent.
Average rating of Expressiveness, 54 per cent. Differs from average −4 per cent.

Points indicated:

1. One-half of all reasons are non-specific, generalized statements that shed little light on the real basis of judgment.
2. In general, non-specific reasons accompany non-differentiating judgments.

7. *Specific Type of Behavior:*

Per cent of total number of reasons, —7.
Average rating of Emotionality, 54 per cent. Differs from the average +17 per cent.
Average rating of Stability, 51 per cent. Differs from the average −4 per cent.
Average rating of Expressiveness, 64 per cent. Differs from the average +7 per cent.

Points indicated:

1. "Very unstable" judgments are given in one-third of emotionality ratings as compared to one-tenth with non-specific reasons.
2. Tendency to rate as expressive.

Typical reasons:

"Extreme nervousness."
"Blue spells."
"Too vivacious."
"Quick movements and love of argument."
"On basis of interest in opposite sex."
"Quite easily peeved, but quick to recover."
"Profanity—also tendency to resort to hobbies when under stress."
"Resorts to 'dear, dear' tactics when called down by higher authorities."
"Inclined to get excited over what others would consider trifles."
"Generally considered unemotional, but will react to religious topics."
"High sense of humor; tries to wear blank expression if she doesn't want others to know what she thinks."

8. *Particular incident or incidents:*

Per cent of total number of reasons, —11.
Average rating of Emotionality, 57 per cent. Differs from average +19 per cent.
Average rating of Stability, 38 per cent. Differs from average −17 per cent.
Average rating of Expressiveness, 58 per cent. Differs from average +1 per cent.

Points indicated:

1. When an emotionality rating of "very unstable" is given, there is a distinct tendency to accompany it with an account of a particular incident.
2. Ratings weighted toward instability show the above tendency.
3. The range of expressiveness ratings is so great that the average stands approximately at the point of the general average.

Typical reasons:

"Ill at ease in a social situation."
"Vituperation at a mild situation."
"He didn't stand up, nor did he smile politely when introduced to me."
"Based on an incident when she vacillated from consent to refusal."
"Reaction to long continued crying of a child."
"Displayed emotion when experiment went wrong."
"Colored when told by a student that he deserved a higher mark."

"Got 'fussed' when teased."
"In some situations has shown action of emotional shock."
"Episodic outbreaks."

Specific reasons:

(Summary of classifications 7 and 8.)

Per cent of total number of reasons, —18.

Average rating of Emotionality, 54 per cent. Differs from average +16 per cent.

Average rating of Stability, 44 per cent. Differs from average −11 per cent.

Average rating of Expressiveness, 62 per cent. Differs from average +5 per cent.

Points indicated:

1. Specific reasons tend to be given with judgments of instability, excessive emotionality, and hyper-expressiveness.
2. Only one-fifth of judgments are accounted for by specific instance.

9. *Emotional behavior in general:*

Per cent of total number of reasons, —4.

Average rating of Emotionality, 54 per cent. Differs from average +16 per cent.

Average rating of Stability, 50 per cent. Differs from average −5 per cent.

Average rating of Expressiveness, 36 per cent. Differs from average −21 per cent.

Points indicated:

1. "Emotional behavior" frequently attributed for judgments of "very unstable."
2. Average weight of ratings is toward unexpressiveness.
3. Although all three rating scales are concerned with emotional behavior, yet this generalized reason appears in but 43 out of 1154 ratings.

Typical reasons:

"Easily excited."
"Blushes profusely."
"Nervous, expressive, emotional, quickly confused."
"Based largely on her expression of emotions."
"Behavior never indicated more than average reaction to emotional stimuli."
"Rather silly at times—easily embarrassed."
"Emotional with uncorked energy."
"Shouted and danced on finishing a problem."
"Responds vehemently with whole body."
"Easily embarrassed, flushes, pauses in conversation to gain control of external expression."

10. *Facial expression:*

Per cent of total number of reasons, —6.

Average rating of Stability, 36 per cent. Differs from average −19 per cent.

Average rating of Expressiveness, 52 per cent. Differs from average −5 per cent.

Points indicated:

1. Facial expression is rarely given as as the basis for a judgment of emotionality or stability.
2. "Facial expression," by direct reference, is given as a basis of only one-fifth of Expressiveness ratings.

Typical reasons:

"Face and manner show little change."
"Although stable, still he reacts facially."
"Have found him a 'facial' man."
"Expression in conversation."
"Vocal and facial responses."
"So trained that he can't express himself."
"No one knows what he thinks by the way he looks."

11. *Laughter and smiling:*

Per cent of total number of reasons, —1.

Average rating of Emotionality, 35 per cent. Differs from average −3 per cent.

Average rating of Expressiveness, 57 per cent. Differs from average 0 per cent.

Points indicated:

1. In only 17 out of 1154 judgments was laughter given as the basis of judgment.

Typical reasons:

"His quick smile."
"Way she laughs."
"Uncontrolled laughter."
"Have never seen him other than smiling."
"Laughs quickly, unless she knows it will hurt someone."
"Laughs easily, expressive, ingenious face."
"Laughs easily but often when nothing is funny, as it were a habit."

12. *Eye movements:*

Per cent of total number of reasons, —0.3.
Average rating of Expressiveness, 70 per cent. Differs from average +13 per cent.

Points indicated:

1. A frequent basis of judgment given in works of literature but which is actually seldom mentioned as a basis of judgment.

Reasons:

"Eyes and eyebrows."
"Snappy brown eyes."
"Quizzical eye changes."

13. *Manner of speech, tone of voice:*

Per cent of total number of reasons, —1.
Average rating of Stability, 20 per cent. Differs from average —35 per cent.
Average rating of Expressiveness, 31 per cent. Differs from average —26 per cent.

Points indicated:

1. Another favorite literary basis of judgment which is very infrequently given.
2. Occurs in too few cases to make averages significant.

Typical reasons:

"Nervous jerky speech."
"Probably because she speaks so slowly."
"Speaks quickly and giggles."
"Timbre of voice."
"Doesn't express emotion in his face, only in his speech and movement."
"Inflection of voice."
"Easy, drawling speech."
"Vehement, aggressive, decided words; pitch of voice as well as as rapidity of speech."

Emotional factors:

(Summary of classifications 9, 10, 11, 12 and 13 above.)
Per cent of total number of reasons, —13.
Average rating of Emotionality, 50 per cent. Differs from average +12 per cent.
Average rating of Stability, 43 per cent. Differs from average —12 per cent.
Average rating of Expressiveness, 48 per cent. Differs from average —9 per cent.

Points indicated:

1. Although all ratings were of emotional behavior, still we find "Emotional Factors" given in but one-eighth of the reasons.
2. The weight of the average of each of the three ratings is toward instability and unexpressiveness.

14. *Intimate contact:*

Per cent of total number of reasons, —2.
Average rating of Emotionality, 44 per cent. Differs from average +6 per cent.
Average rating of Stability, 59 per cent. Differs from averge +4 per cent.
Average rating of Expressiveness, 76 per cent. Differs from average +19 per cent.

Points indicated:

1. We tend to rate intimate associates as normal emotionally and as very expressive.

Typical reasons:

"Moderate balance in difficult situations, based in intimate knowledge."
"Much superficial expression, otherwise slightly repressed; thorough acquaintance for a year."

"Repression most obvious observation, but intimate knowledge makes me feel moderate stability is more appropriate."

"From close association with him I think that he is not the sort to ever lose his head."

15. *Appearance, physical characteristics:*

Per cent of total number of reasons, —5.

Average rating of Emotionality, 39 per cent. Differs from average +1 per cent.

Average rating of Stability, 61 per cent. Differs from average +6 per cent.

Average rating of Expressiveness, 50 per cent. Differs from average —7 per cent.

Points indicated:

1. Stability and expressiveness ratings are affected by appearance or physical characteristics.
2. In general, the distribution of ratings here is comparable to that of non-specific bases.

Typical reasons:

"General appearance; poor coördination in walking."

"Not strong in physical appearance."

"Good, substantial looking girl."

"Looks physically strong but would probably go to pieces."

"Doesn't look strong; seen other looking like him go to pieces in pain."

"Rather quiet type; not husky and strong."

"Size and manner."

"Weak looking."

"Poker face."

"The singular appearance."

"Red headed. Must be fiery tempered and fly into a rage at anything."

"The round face with a full moon's happiness makes me feel he would not be as cold as the luminary nor as stable either."

16. *General attitude of subject:*

Per cent of total number of reasons, —9.

Average rating of Emotionality, 32 per cent. Differs from average —6 per cent.

Average rating of Stability, 58 per cent. Differs from average +3 per cent.

Average rating of Expressiveness, 40 per cent. Differs from average —17 per cent.

Points indicated:

1. "Attitude" as a basis of judgment, affects ratings of expressiveness somewhat, but not stability or emotionality.
2. The distribution of ratings is that of a non-specific reason; probably this should be regarded as a non-specific type of reason.

Typical reasons:

"Seems easy going and lazy."

"Sophisticated, cynical, skeptical attitude."

"Nervous temperament, moody."

"Sedate and stiff."

"Gets 'riled up' easy."

"Knowing him to be eccentric, I judge him highly excitable."

"Exaggerated reactions."

"Self-conscious."

"Observation of habitual alertness in self-defense when none attack."

"Loves nobody, feels he has the world to fight and does."

"Emotionally inclined but covers it up with a blasé attitude."

"Very sensitive and influenced by what others think."

"Jolly, happy-go-lucky."

17. *Unclassified reasons:*

Per cent of total number of reasons, —2.

Points indicated:

1. Nothing definite since each reason is an independent factor.

Typical reasons:

"Hearsay."

"Cerebration, with this particular problem (of rating) in mind."

"Never saw her in a position which she didn't handle by means of skeletal musculature."

"Noticed compensations; if you arouse emotionally, is likely to approach a break."

"Married young."
"Believe early religious training will assert itself."
"The deification of statistics."

Several of the judges wrote a note concerning their general method of rating or judging these traits. Typical of these are the following:

"General basis: Ask self question, 'Would he show "good sense" when faced by all situations and would he control the emotion and its expression well?' "

"The method I used is the same for all individuals—the reactions of the subjects to myself, to other people, and to the reactions of other people, including such elements as overstrained laughter, volubility, blushing, tenseness, impulsiveness, apparent control, expression, and language. The estimates are all rather general estimates in which I have no great amount of confidence."

"Judgments made on general impression, no doubt gathered from specific instances, but I don't know what now. The specific instances are not in any case observations of emotional crises but rather of such things as, probably, mannerisms in talking, how they have sympathized with emotional situations of others, how they act in more or less embarrassing situations, etc."

With six exceptions the judges consisted of teachers and graduate students in psychology. The exceptions were all college seniors or graduates of college and all had had some training in psychology. It is altogether probable, if a similar analysis were made of ratings, say of shop foremen, that the classifications of reasons would be different, and the average of judgments under each classification different. However, with regard to the trend of results, the general conclusions reached here would probably remain true.

Ratings and Reasons

Perhaps the most outstanding thing demonstrated in this study is the difficulty which judges find in giving a basis for their ratings. This difficulty is so outstanding that it at once suggests the question of the relation of the validity of the judgments to the specificity of the justification which the judge offers. Psychologically, there is, apparently, no reason why a judgment should be less valid simply because we are unable to give an exact and detailed basis for it. The observations of the reactions of an acquaintance in many varied and disparate situations become integrated into a "general impression." When asked to judge his emotional stability, one is able to give an opinion. If asked the reason for the judgment, one may say, "It's a guess," or think of some specific situation which characterizes his emotional behavior. The one situation described is, however, only the expressive symbol for a mass of "unconscious" reactions on the part of the observer. If his behavior is characterized as unsocial, e.g., very unstable, one may feel that some definite justification is needed for the statement, and hence, give a specific instance. However, the instance does not affect the validity of the judgment.

This opinion was open to objectification. When all ratings were sorted on the basis, "Is anything definite or objective stated in this reason," it was found that 42 per cent (480) of all reasons or 30 per cent of all ratings pointed to a specific or definite basis. Eighteen of the 35 judges gave 5 or more specific reasons. From this second classification a ranking of the subjects was obtained, based on definite reasons, and a ranking based on indefinite or no reasons. The rank

difference correlations between these two groupings for emotionality is +0.86, ±0.03. The correlation for stability is +0.63, ±0.09 and for expressiveness, +0.68, ±0.08. In each case the correlation is about that of the reliability correlations of each scale. If at this point we recall that the intercorrelations between the scales is +0.90, −0.67 and −0.52, as was discussed above, then since all these correlations are so high, we may conclude that definiteness of the reason given in justification of a judgment neither adds nor detracts materially from the validity of the judgment, since the validity of the scale has been shown without reference to the justifications.

In all 1613 ratings were made; 1154, 72 per cent, of these were accompanied by some sort of explanation. A glance at the bottom of Table 1 shows that almost every rating, 88 per cent, of emotionality which was unaccompanied by a reason was "2", i.e., normal. For stability the 191 ratings without reasons average identical, 55 per cent, with those accompanied by reasons. The 204 ratings of expressiveness unaccompanied by reasons averaged at 58 per cent, which is only 3 per cent above the ratings with reasons. What does all this indicate as to Mr. X's ability as a judge of human characteristics? Mr. X makes a judgment of Mr. A's emotionality. If his judgment implies either an unsocial or extreme trait he is apt to give a specific reason in justification. If he rates the individual as normal or slightly toward the more socially approved end of the scale his justification is apt to be a generalized or non-specific reason or he may be unable or unwilling to give any reason at all in justification of his rating.

Comparison of the summarized figures classified under "Intimate contact" and under "General acquaintance," shows ratings of 44 and 41, and 59 and 60 per cent respectively, for emotionality and stability. To a certain extent this indicates that degree of acquaintanceship does not alter the trend of the judgments of these factors. There are too few cases to obtain rankings so as to find the correlations. Expressiveness does show a difference, 12 per cent, but there are too few cases to substantiate any definite statement.

The fact that only 13 per cent of the reasons given could be classified under some category of emotional factors is rather striking since all ratings were of emotional traits. Further, only 24 per cent of the reasons given for expressiveness ratings can be related to facial expression, laughter, or eye movements. This goes to indicate that we do not isolate factors when we make a judgment; in fact, it is only another example of the "halo" effect, to which considerable attention has been paid previously.

"Appearance, physical characteristics" is another point which deserves some discussion, almost all experimental work, which has taken for its object the relationship between physical characteristics and character traits, has given zero correlations. Yet there is hardly anyone who does not form a great many of his estimates of his associates on the basis of their appearance and physical characteristics. As pointed out above, these three rating

scales afforded correlations of +0.26, +0.46 and −0.14 with the height-weight ratio. The tabulation shows that ratings of stability, which were based on appearance or physical characteristics, are 6 per cent above the general average of stability ratings, while expressiveness ratings are 7 per cent below the general average. Physical characteristics tend to influence our judgments toward stability and unexpressiveness, more than vice-versa. (The number of cases is so small as to leave this statement open to question.)

CONCLUSIONS

What points of practical value for vocational purposes are indicated in this study? The following seem justified:

1. Rating scales give consistent results and correlate highly with other measurements of the same traits. Therefore the rating scale must be considered a fairly reliable method in spite of the irrelevance of many of the reasons assigned by raters for their ratings.

2. Half of the reasons given in justification of a judgment of a general trait will probably be non-specific.

3. A specific reason is apt to be given when the judge considers that his rating implies some undesirable or unsocial trait.

4. Reasons of the most bizarre sort may be given, even by very competent judges, in order to justify a rating.

5. Ratings probably are influenced by the physical characteristics of the subject.

6. For the group studied here, ratings of emotionality and stability do not differ materially whether made by intimate associates or general acquaintances.

7. Judgments of emotionality, stability, and expressiveness tend to take a skewed distribution, the mode being toward stability and expressiveness.

Speed Versus Accuracy in the Development of Industrial Skill

By Garry Cleveland Myers, *Cleveland, Ohio*

In training workers on new jobs, does it not pay to make haste slowly? Dr. Myers reviews some school experiments that show how wasteful it is to place too early emphasis on speed. Experiments under industrial conditions are needed, to determine whether here also it is not economical in the long run to stress accuracy at the start.

IN THE best industries, the development of specific skills is not left to a hit or miss procedure. The new employee does not immediately enter upon the particular work for which he is hired; instead, he is given a carefully directed training course. He goes to a vestibule school for several days or weeks to learn under expert teachers to do what he is to do in that industry. He receives a definite wage during this learning period, but he is not a direct producer. He is just preparing to produce.

Since the aim of this teaching is to develop as much speed as is consistent with nearly perfect performance, the directors of such schools have a right to look for suggestions to the experimental data already available on the psychology of learning. What evidence is in hand as to the results of stressing speed rather than accuracy in early learning?

Researches on skill development have led to the conclusion that speed and accuracy go hand in hand; that the person who tends to be very accurate is likely to be high in speed. Strange to say, many practical school men and, indeed, some experts in formal education have presumed to reverse this relationship to read, high speed means high accuracy. This being the case, they argue, the beginner should be encouraged to work for speed. With speed the goal, accuracy is bound to follow.

It is true that this point of view has received some bolstering from the evidence that there is greater concentration when learning is done against time. Moreover, although the use of standard tests has served a tremendous good in some respects, the fact that speed is an essential factor in the successful performance of such tests, has stimulated an undue interest in speed to the detriment of accuracy.

In spite of this tendency on the part of other educators, the teacher of industrial skills cannot afford to forget the fact that he is working to establish precise motor habits. He knows that in his school, if, by working for speed, the pupil learns an incorrect move-

ment, this wrong coördination must be unlearned before the correct pattern can be established. Every mistake made in learning to manipulate a machine or to establish the bond 9 x 3, retards progress in those skills later on. A specific answer then, to the query, "Does early speed effect later accuracy?" is most pertinent to his problem.

There is scientific evidence for "Accuracy First." Some years ago an investigation by Margaret Broom, Augusta Spett and the writer, of the relation of speed and accuracy to learning, definitely demonstrated that if accuracy is stressed in early learning, not only will the performance be practically perfect at the end of the training period, but also the speed will be greater than under conditions of learning where speed is emphasized.[1]

This experiment consisted of placing 36 colored cubes, that had been previously shuffled, according to a certain pattern. The subjects were all girls and were divided into two groups of eight. One group was instructed to work for speed, and were reminded by their leader at each trial to speed up all they could. The other group was told to emphasize accuracy. They were reminded at each trial to take great care that no errors were made. It was found that although the speed group placed the blocks in much less time during the first several days, they were at the same time developing a number of errors which tended to become more and more fixed and finally provided an effective block against further increase of speed. On the other hand, after about a score of trials, the accuracy group overtook the speed group. At the end of sixty days this group had increased its relative gain over the speed group. Not only was the performance of the accuracy group practically perfect, but it was *more rapid*.

A similar experiment in typewriting was performed by two squads of seven girls, each practicing three minutes a day for thirty-six consecutive days. In this case, at the end of the period the accuracy group had not gained much over the speed group; but later, after four months of no practice by any of the performers, when each squad copied, for speed, unfamiliar material for ten minutes, the speeders wrote an average of 383 words, while the accuracy group wrote an average of 451 words. The quality of the accuracy group, although not perfect, was an average of 1.2 words wrong per hundred words written; that of the speeders was 2.2.

It is interesting to note that in the latter part of the experiment the speed girls reported that they had difficulty in keeping from emphasizing accuracy while the accuracy girls tended to work for speed, even though they knew that they were placing their accuracy in jeopardy by so doing. If the groups had been able to maintain the initial attitude called for in the first part of the experiment, it is possible that the above results might be still more definitely in favor of the accuracy group.

Sturt has lately reported a series of experiments which corroborate these findings. She found that in type-

[1] School and Society, December 7, 1918, Vol. 8, pp. 687-690.

writing for instance, if the attention was directed solely to speed, accuracy tended to diminish. On the other hand, if the attention was directed solely to accuracy, speed generally improved.[2] This principle has long been recognized by business schools. A pupil is not allowed to typewrite rapidly until he can write very accurately.

With these facts before him, the personnel director cannot afford to continue having new employees trained with the prevailing emphasis on speed at the start. He is now faced with the problem of framing a definite research on this question under conditions typical in his industry.

[2] British Journal of Psychology, December, 1921, Vol. 12, pp. 289–300.

Book Reviews

SKILL IN WORK AND PLAY

By T. H. Pear. New York: E. P. Dutton & Company, 1924. Pp. 107

REVIEWED BY ALAN F. KING

This interesting little volume by the Professor of Psychology at the University of Manchester discusses—as simply as the circumstances will permit but without ignoring the psychological viewpoint—the problems involved in understanding the acquisition and exercise of muscular or bodily skill. It also attempts to explain how the principles described can be of use to those who teach games or the economical methods of industry.

The author analyzes in detail the learning of figure-skating. One might have expected an analysis of the learning of processes of industrial work, numbers of which should be available now as a result of motion study, moving pictures and the slow-speed projector. However, the principles of acquiring skill can be applied to either work or play. The difference between them is really in the spirit which we put into moving and thinking.

The first chapter gives a description of muscular experience from the physiological viewpoint but at the same time keeps it understandable to the layman. Muscular sensation is clearly defined and described and the reader is asked to interpret the phrase "muscular sensation" throughout as meaning kinaesthesis, the awareness of one's own bodily and muscular movements. Clear differentiation is made between muscular capacity, ability, and skill; the first being the actual capacity for certain muscular movements regardless of the possession of ability or skill, while ability is learning to some extent as a result of the use of that capacity, and skill, the high development of ability.

The author deplores the lack of vocabulary concerning muscular sensation and shows why, when one is asked to describe some movements in a game, the reply is usually, "Look for yourself." An individual may have highly organized muscular knowledge, and yet not be able to impart it to others. This may be due, principally, to lack of attention to inventing words with which to describe muscular experiences, and to the often imperfect education of those whose business it is to teach games and manual work. If muscular skill is to be appreciated, those who are skilled must not only be able to do, but to describe their feats as well.

The acquiring of skill is compared with the acquiring of knowledge and thus is made out to be the organization and integration of bodily habits and movements. Habit is distinguished from instinct, but the relations of the two are shown. Several classes of skilled acquirements are given brief discussion and to this is added a comparison of blind learning and thoughtful learning. A book of this kind might be expected to give some rules or suggestions for acquiring skill but they are left for the reader to infer. Is this wholly due to the woeful lack of the vocabulary that would be necessary?

Recent experimental investigations of learning and analytical studies of acquiring skill, as a result of the pioneer work of Taylor and Gilbreth seem to show that if more attention is paid to the ease with which a worker performs a series of movements rather than to the speed, greater benefit and satisfaction will result to the workers, and greater will be the output.

This augurs well for the future of industrial efficiency. Quite a number of reforms and improvements in method are suggested for use in industry, some of which seem very practical and simple to apply. An interesting illustration of how one industrial process was investigated is a study of the methods of expert coal miners in Lancashire. It was found that they used a faster stroke in excavating dirt and a slower one for getting out coal, because the pick sticks in the coal. By means of a stop-watch and a metronome the best rates of hewing both materials were ascertained and then all the men were trained to adopt them.

In order to aid anyone confronted with the problem of introducing such easy methods of work into a plant, the author very carefully considers the questions of how they should be taught, who should teach them, how to learn, and the relation between training and education. There are thoughts here that would be valuable to many a foreman or superintendent who wonders what's the matter with production.

A whole chapter is given to the last-named question and an illuminating one it is. The chief conclusion that one may arrive at after reading it, is that while training in muscular performances has only a limited general educative value, yet what there is may prove useful in evolving methods of training the workers in industry. To some extent the author shows how this can be done, and gives some worthwhile suggestions although not nearly as many as the man in practice might wish. On the whole this book should prove of considerable usefulness and be a stimulus to research.

SCIENTIFIC MANAGEMENT SINCE TAYLOR

Edited by Edward E. Hunt. New York: McGraw-Hill Company, 1924. Pp. xix + 263

REVIEWED BY CHARLES B. GORDY

Scientific Management Since Taylor, edited by Edward E. Hunt, unquestionably belongs to the rather limited number of authoritative books on the subject of scientific mangagement. The subject matter is not, as one would expect from the title, an attempt to measure the growth of scientific management since the death of Frederick W. Taylor. It is more in the nature of a symposium. It has accomplished for the present development and use of Mr. Taylor's methods and principles what *Scientific Management*, by C. Bertrand Thompson, did several years ago.

The Introduction and the Table of Contents form an agreeable beginning. The authors of the individual chapters are the ones whom we have grown accustomed to regard as the vanguard of those who are advancing the frontier of good management in American industry.

The papers are classified under four main headings. The first, "Nature and Achievements of Scientific Management" constitutes a general review of the field, covering a statement of its history, an examination of the types of management and a critical analysis of its accomplishments. To quote from the opening article by H. S. Person, ". . . . administration is largely a process of forming judgments, which may have serious social, political and other moral aspects, must be largely empirical and can utilize in but a limited way principles and laws determined by the scientific method of investigation; whereas management, on the other hand is concerned with the relations and reactions of particular forms of organization, routine, materials, equipment, and physical and psychical conditions, may proceed upon principles determined by the scientific method of investigation and is more or less mechanistic in its nature." Surely this is a common sense

ground to take between those who condemn scientific management and those who regard it as a fetich!

H. H. Farquhar's article is an admirable summary of the pioneering in new fields which has been carried on in recent years under the banner of scientific management. Had the distinction between administration and management, as defined by Mr. Person, always been kept clearly in mind, much of the opposition which Mr. Farquhar mentions could hardly have arisen. However, this distinction is only one illustration of the perspective which comes as a result of distance in time.

The second heading, "Scientific Management in General Management" considers the relation between the two. Were it necessary to defend the teaching of management in our schools and colleges, possibly no better presentation of the case could be gathered than from Mr. Person's article, "Shaping Your Management to Meet Developing Industrial Conditions."

"A Technique for the Chief Executive," by J. H. Williams, is, perhaps, the outstanding article of the collection. This, with "The Control of an Industry in the Business Cycle," by Howard Coonley, demonstrates clearly that hunch is not an important element in the technique of the chief executive.

The third heading, "Stabilizing Operations and Employment," summarizes the accomplishments of scientific management in regard to the problem of unemployment. H. Feldman's article, "The New Emphasis in the Problem of Reducing Unemployment" stresses the fact that responsibility rests, to a large extent, upon the management of individual plants, and that the evil of unemployment must be cured from within. He includes a valuable survey of the practice of managing plants from this point of view.

In "Scientific Management and the Reduction of Unemployment" H. S. Person shows that the more concise control under scientific management eliminates "unemployment within employment." A further point is made that unemployment is partly an administrative problem and scientific management gives freedom in this field, which is necessary to the formation of broad policies affecting unemployment.

"Scientific Management During Periods of Depression" by Richard A. Feiss, and "Industrial Standardization" by Herbert Hoover, form an admirable support for the first two articles mentioned.

The fourth heading, "Ownership, Management and Workers," consists of "The Progressive Relation Between Efficiency and Consent," by Robert G. Valentine; "Can Industrial Democracy be Efficient? The Rochester Plan," by Meyer Jacobstein; "The Worker's Reaction to Scientific Management," by William R. Leiserson; "The Manager, the Workman and the Social Scientist," by H. S. Person; "Why Men Strike," by Edward A. Filene; and "Scientific Management as Applied to Corporate Structure," by Henry S. Dennison. As a whole this last collection is concerned with the social aspects of scientific management, and concludes the symposium in a masterly way.

To appreciate Mr. Hunt's book it is necessary to have considerable knowledge of the original sources of scientific management literature, such as Taylor's "Shop Management," "Transactions of the American Society of Mechanical Engineers," and Copley's "Frederick W. Taylor."

Abstracts

The Validity of Self-Estimate. EUGENE SHEN. Journal of Educational Psychology, February, 1925, Vol. 16, No. 2, pp. 104–107.

Describes an investigation to find out whether an individual can know himself better than he knows his associates. Twenty-eight individuals were requested to rank themselves and one another with respect to the following traits: intellectual quickness; intellectual profoundness; memory; impulsiveness; adaptability; persistence; leadership; scholarship.

In the first part of the study the average rating of an individual by the group was compared with his self-estimate. The results show that an individual tends to rank himself in a group less accurately than he does his friends, on the average. Also, we tend to over-estimate ourselves in most traits and under-estimate ourselves in a few.

In the second part is determined whether or not the tendency to over- or under-estimate oneself is consistent with the individual. Here the individuals were divided into five groups according to the number of traits in which they over-estimate themselves. The apparent inaccuracy of self-estimate was found to be largely due to a systematic error of the individual—a tendency to over-estimate or under-estimate himself in all the traits according to the kind of delusion that he has about himself. Thus, though an individual is likely to rank himself in a group less accurately than his associates he really knows himself well, in that he knows his relative strength in the various qualities rather accurately.

The Vocational Guidance Program of the Y. M. C. A. C. C. ROBINSON. Vocational Magazine, February, 1925, Vol. 3, No. 5, pp. 174–176.

Outlines what the Y. M. C. A. is doing in vocational guidance not only for those who come to the Employment Bureau but for the students in the Educational Departments as well. The work extends all over the United States and in many foreign countries.

Some guidance is attempted in the placement offices even though the immediate thought is for a job. The Associations in various cities that do this, exchange experiences, and hope to advance this work rapidly.

In the Educational Departments a different problem presents itself and more leisure can be given to vocational guidance. Some experiments are even being made in the conduct of life career classes.

The Student Department, working in the colleges and universities, endeavors to supplement what is being done by the student authorities. A new program is being worked out in this field for coöperation with college faculties.

The Boys' Division has a specialized form of vocational guidance, endeavoring to adopt the principles developed in schools and colleges to boys who are out at work but who have no one to give them particular guidance. Help is also given to boys in high school where it cannot otherwise be obtained. Use is made of an "Analysis Blank" to help them make simple studies of their past and present experience and to discover any urge or tendency in any one vocational direction.

Not much has been attempted in the way of vocational testing, but coöperation has always been carried on with public schools or municipal agencies that do that work. The latest experiment is concerned with a study of vocational tendency, trying to help boys discover whether they have some primary tendency, or whether they have several urges in the line of work. It has been found that a great many jobs require, not a single tendency, but a multi-

ple tendency or combination of urges. In the Vocational Forums where this study goes on principally, boys are aided in cataloguing their interests under various tendencies, given requirements of vocations, necessary aptitudes, etc. It is admitted that this is all highly experimental and subject to change.

The Working Children of Philadelphia. ANNA BASSETT GRISCOM. Philadelphia: The White-Williams Foundation. Bulletin Series No. 3, September, 1924. pp. 45.

Comprises a survey of the work and working conditions of a large group of continuation school children in Philadelphia, made for the purpose of gathering information about wages, advancement into adult occupations, the industries where the largest number of children are employed, etc. As this survey was made in conjunction with the Junior Employment Service one of the objects of the field work was to disseminate information regarding it.

The occupations of the children are described. The nature of the work and the nature of the training received, the mental and physical qualifications, wages, and opportunities for advancement, are all dealt with in detail. In discussing the working conditions such topics as ratio of children to adult employees, nationalities, working hours, welfare and health conditions, employee representation, location and type of buildings are treated, and for fifteen special industries complete information as to employees, establishments, hours of labor, wages and occupations, and employee representation is given.

This survey and report is meant to be of assistance to employment counselors especially, but also to social workers, educators, and all those whose activities bring them in contact with child labor employment and the making of better citizens from this raw material.

The Electrical Industries of Philadelphia. CHARLES KELLER, JR. Philadelphia: The White-Williams Foundation. Bulletin Series No. 4, November, 1924, pp. 80.

Gives information for vocational counselors and placement workers as to the opportunities for young people in the electrical industries. Consists principally of a study of the occupations involved in the generation, distribution, and sale of electric current, and in the manufacture installation, and repairing of electrical equipment of all kinds. Some two hundred and seventy-two firms were investigated. Information was gathered also from trade schools, libraries, etc.

Discusses in a general way five types of electrical industries and four main classes of electrical products; gives a brief outline of the growth and development of the electrical industry, its contribution to social and industrial progress, the proposed superpower plan, etc.

The opportunities for employment and instruction are considered in great detail, the occupations being listed for each of the five types of industries. The principal divisions of the electrical engineering profession are described, giving the qualifications necessary, the responsibilities, means for training, and some of the advantages and disadvantages. In addition, the electrician's trade is covered similarly.

A brief summary of working conditions makes up the last part of the report. Outlines of the electrical engineering courses offered in several institutions, and also a chart of work and wages in firms manufacturing electrical machinery and equipment, are included in the appendix.

Fatigue Tests and Incentives. HELEN FRANCIS WHITNEY AND HORACE BIDWELL ENGLISH. Journal of Experimental Psychology, February, 1925, Vol. 8, No. 1, pp. 33–49.

This investigation carried on at Wellesley College represents an attempt to devise simple and accurate tests of fatigue. Since lessened efficiency for work gives to the problem its practical interest, the work-decrement was measured. This work-decrement may show itself in three ways: loss of speed, loss of accuracy, and the fact that while fatigue may not affect tasks

of little difficulty it may greatly influence more difficult tasks.

Accordingly, tests for speed, accuracy and difficulty for both physical and mental work were given to sixteen under-graduate students in the morning before college work and in the afternoon following the regular college work. No significant differences were found. In spite of the fact that some fatigue must have been present, no measurable work-decrement was found, and in some cases there was even a work-increment. This was believed to be due to the test attitude, so another set of tests was devised to overcome the effects of spurting. It was also believed that other incentives besides the test incentive might operate to overcome fatigue, so attempts were made to regulate conditions in such a way that certain other incentives would be present. Rivalry was one of these; but the results showed that it had little effect.

The second series of tests extended over forty-five minutes of continuous work and then was immediately repeated in reverse order, thus giving ninety minutes of continuous, high tension work. This series, undertaken by only four subjects, consisted of various cancelation, addition, and multiplication tests, speed of movement tests, steadiness tests, memorizing, reproduction and division of lines, etc. Results were very largely negative. The hope of measuring the effect of various incentives was not realized. None of the four subjects showed any real loss of efficiency except in the speed of movement test.

No positive theory was put forward but the hypothesis is advanced that fatigue is a negative emotional appetite. As such it is to be differentiated from the physiological phenomenon of exhaustion of which it is a concomitant. As an emotion in the broader sense, fatigue is a conscious (if negative) motive to action.

Fatigue does not directly cause work-decrement but raises the threshold at which work motives are effective. But if such positive motives are adequate at all, the fatigue—as distinguished from the accompanying exhaustion—has no effect on work efficiency.

A Brief Series of Tests for Manual Dexterity. Esther C. Whitman. Journal of Educational Psychology, February, 1925, Vol. 16, No. 2, pp. 118–123.

Attempts to standardize a test series governed by manual dexterity rather than the higher mental processes, and does not base it on primary factors, such as learning ability or reasoning. A test so far as possible restricted to manual ability has very special significance for vocational guidance and selection.

This series was organized at the Boston Psychopathic Hospital and given to about 500 school children of Walpole, Massachusetts. The test takes only twelve to fifteen minutes to give. The material, layout, instructions, and scoring are given in detail and illustrated.

Four hundred and thirty-four children were also given the "Myers Mental Measure." The results were correlated with the tests of dexterity. For the entire group the coefficient was −0.65, P.E. 0.019. Intercorrelations were also made between several of the items but the results showed no relationships that would make advisable the elimination of any of the items.

The Differentiation of the Aptitudes of an Individual by means of Test Batteries. Clark L. Hull and Charles E. Limp. Journal of Educational Psychology, February, 1925, Vol. 16, No. 2, pp. 73–88.

Suggests that differential psychology to be of much value must be able to forecast differences among individuals, and in addition it must be able to forecast the relative efficiency of an individual in different kinds of endeavor. A scientific vocational guidance will never be realized until it is possible to forecast on a uniform scale the important type aptitudes of an individual so as to determine how efficient he will probably be in a given vocation as compared with several others. This investigation attempts to explore the possibilities of such differential prediction.

Group test scores and aptitude criterion scores were available for 73 first year high school students. Aptitude test batteries were organized for shorthand, typewriting,

English and algebra. These batteries correlated with their criteria to the extent of 0.51, 0.61, 0.65, and 0.74, respectively. When these test batteries were employed to estimate the nature and extent of the *difference* between a person's aptitude to do one thing and a second thing, the correlation coefficients were less: 0.17, 0.23, 0.31, 0.42, 0.42, and 0.50. This shows that to distinguish the various degrees of different aptitudes within a single person is a different and more difficult thing than to distinguish the various amounts of a single aptitude in different persons. But the study does show that there are probably real differences in the aptitudes of individuals for such similar activities as learning the subjects taught in high school. The study suggests that a scientific vocational guidance may be realized by making forecasts on numerous type vocations from many test batteries made up from various combinations and weightings of a relatively small number of original test scores. The determination of the foci of vocational types and the lines of vocational cleavages are difficult problems which the future must face.

A Note on the Organization of Drill Work. F. B. KNIGHT. Journal of Educational Psychology, February, 1925, Vol. 16, No. 2, pp. 108–117.

Studies the effect of intensive drill work in Grade VI arithmetic. Discusses the relative value of distributed practice versus bunched practice, and also whether or not practice on all the units of a skill is better than practice on a fragment of the skill. Gives various principles of value in building drill material.

It is possible to build drill material to exact specifications. With the use of an analysis of the skill for which the drill is constructed, it is practical to provide drill which practices every unit of the total function with a calculated frequency. As far as is known, no harm would be done if the specifications of drill material in terms of its constituent elements were written first and then the drill material built to those specifications.

It is further possible that the scientific teacher may yet buy drill by specifications including other factors than mere amount, as engineers have long since learned to buy steel, coal, and even the paper upon which drill material is printed.

Legislation on Annual Holidays for Workers. International Labour Review, January, 1925, Vol. 11, No. 1, pp. 60–82.

Of recent years, and especially since the war, annual holidays with pay for all classes of workers have become more and more general. The tendency towards their general adoption is shown chiefly by legislation and collective agreements. The present article is limited to a survey of legislation on the subject, collective agreements not being dealt with. At the present time holidays with pay for large groups of wage-earners are compulsory by law (enacted since the war in each case) in Austria, Finland, Latvia, Poland, and Soviet Russia. Holidays, generally with pay, are also made compulsory for certain classes of workers in private employment by legislation in Austria, Czechoslovakia, Denmark, Finland, Iceland, Italy, Luxemburg, Spain and Switzerland. Some of these laws were passed before 1918, but most of them since that date.

In addition, civil servants and other employees of the state and local authorities in a great many countries have for a long time been allowed annual holidays by law or administrative order.

In a large number of countries holidays have become a general institution without legislative action, chiefly by collective agreement or under the influence of custom, which is in effect a tacit "collective agreement." Even where there is legislation on holidays collective agreements frequently play an important part, as they supplement the law in spheres to which it does not apply and in matters with which it does not deal.

It may be repeated that this article is limited to a digest of legislation. It therefore does not exhaust the subject; it does not give a complete survey of the present position and gives only an incomplete indication of the magnitude of the movement towards extending the system of holidays with pay.

News Notes

NEW HEADQUARTERS FOR PERSONNEL RESEARCH FEDERATION, INC.

On April 27, Personnel Research Federation, Inc., moved into new offices in the American Radiator Building, 40 West Fortieth Street, New York. This building adjoins the Engineering Societies Building on the North, is next door to the Engineers' Club, and overlooks the New York Public Library.

Since its organization, March 15, 1921, Personnel Research Federation has shared the office of its first secretary, Mr. Alfred D. Flinn, Director of Engineering Foundation. The Federation is deeply indebted to Mr. Flinn and to Engineering Foundation for their courtesies. Its Administrative Board has expressed regret that lack of additional space in the Engineering Societies Building, where many facilities and contacts were enjoyed during the formative period of the Federation, have made removal to another location neccessary.

The new headquarters are most conveniently situated. Workers in industrial, educational or public personnel administration, and in any of the applied sciences that contribute to personnel research, will always be welcome here.

CONFERENCE ON METHODS OF RESEARCH IN INDUSTRIAL RELATIONS

May 22, 1925

May 22nd is the date on which Personnel Research Federation will hold at the National Research Council in Washington, the conference announced in the last issue of the JOURNAL, on research methods available for getting at the truth regarding relations between workers, supervisors and employers.

The methods of investigation developed by the Department of Industrial Research of the Russell Sage Foundation for use in its study of the Rockefeller Industrial Representation Plan will be presented by Miss Mary Van Kleeck. These methods and other methods of investigation will be discussed, criticized and evaluated by Joseph H. Willits William Green, Glenn A. Bowers, Whiting Williams, R. S. Woodworth, C. R. Mann, and others.

Howard Coonley, President of Personnel Research Federation and retiring President of the Boston Chamber of Commerce, will preside.

Further details of this conference may be had on application to the Personnel Research Federation, 40 West Fortieth Street, New York.

COLLEGE VOCATIONAL GUIDANCE CONFERENCE

National Research Council, B and 21st Streets, Washington, D. C.

May 22 and 23, 1925

Under joint auspices of Personnel Research Federation, American Council on Education, National Research Council, and Advisory Council of the proposed Bureau of College Personnel Research.

Tentative program

Friday, May 22, 2:30 p.m.

Registration. Exhibit of research materials and reports, bibliographies, occupational information literature, and record forms in current use.

Appointment of Committees, Dean Hawkes, Chairman. Informal Group and Committee Conferences.

8.00 p.m. Reports of Researches in Progress. Definition of Issues in Research Method.

Saturday, May 23, 9:30 a.m. and 2:30 p.m.

General conference and group conferences on:

An outline for collecting vocational guidance information bearing on careers in business and medicine:

a. Statistics of occupational opportunities.

b. Personnel specifications.

C. F. Hansen, Beatrice Doerschuk, C. R. Mann.

Progress of coöperative experiments in construction and use of tests. L. L. Thurstone, D. G. Paterson, Ben D. Wood.

Research methods in the development of student interview techniques and measures of personality traits. C. S. Yoakum, L. B. Hopkins.

Effectiveness of different methods of giving vocational information. Mrs. Iva L. Peters, S. B. Mathewson.

Annotated bibliographies of student personnel research. Lewis A. Maverick, H. A. Toops.

Relations of public school bureaus to collegiate research and service. Mrs. M. H. S. Hayes, M. R. Fernald, Dorothea de Schweinitz.

6:30 p.m. Dinner Meeting and Smoker, Cosmos Club

Reports of committees of the conference. Adoption of Recommendations.

Industrial Representation Plan Appraised by Sage Foundation

The Rockefeller Plan of Employees' Representation, which was introduced in the mines of the Colorado Fuel and Iron Company immediately following the famous strike of 1913 and which has since been adopted in hundreds of other plants has proved to be only a partial success, according to a preliminary report by the Russell Sage Foundation, which since 1919 has been studying the operation of this and other plans for giving wage-earners a share in the management of industry.

In making the report public, Mary Van Kleeck, Director of the Foundation's Department of Industrial Studies, said it has a three-fold significance for industry generally and for the country at large; it reveals the underlying causes of the perennial controversy between coal miners and mine operators; it is the first impartial appraisal of the most prominent experiment in employees' representation—an experiment which was the forerunner of the shop committees, works councils, and similar projects introduced in about a thousand companies within recent years in an effort to solve labor difficulties; it points the way to a termination of the conflict between the employers interested in employees' representation plans and organized labor which has thus far bitterly opposed such plans in the belief that they set up "company unions" designed to replace labor unions.

The Industrial Representation Plan was developed by W. L. Mackenzie King, now Premier of Canada, at the request of John D. Rockefeller, Jr., and was introduced at the mines of the company by Mr. Rockefeller. At each mine, two or more representatives are elected by the employees to serve for one year. These representatives from all branches of the company meet periodically with an equal number of company officials. At these conferences any matter which employees desire to have discussed can be brought up. There are also in each mining district joint committees composed of equal numbers of employees' representatives and company officials to consider: (1) safety and accidents; (2) sanitation, health and housing; (3) recreation and education; (4) industrial coöperation and conciliation.

The report shows that as a result of this plan, working and living conditions are more wholesome and happy for the miners and their families, but that the miners are not satisfied that their representatives have the power to protect them in decisions regarding wages and other conditions of work.

"Employees' representation, as practised in the mines of this company," Miss Van Kleeck said, "works a revolution in remedying the outstanding grievances of an earlier decade, but—limited as it is to

conference, concerned primarily with adjustment of grievances, and failing to take cognizance of organized labor—it does not develop leadership or stimulate interest among the wage-earners. The lesson for industry generally in the experience of this company is that giving workmen a voice in the management of industry is decidedly a step toward permanent industrial peace and efficiency, but the measure of success to be attained by an employees' representation plan depends on the sincerity and intelligence with which the plan is carried out by foremen, superintendents and higher administrative officials."

The report points out that at the Colorado Fuel and Iron Company the employees' representatives are men who work in the mines and who do not feel free to act in opposition to the company's interest in defense of fellow-employees; that employees are not making full use of the plan even for the presentation of grievances; that in actual practice the employees' representatives have no share in decisions concerning reported grievances; that the issue of trade unionism versus employees' representation is kept constantly alive by the company's refusal to permit union meetings in any building in the camps owned by the company, by other frequent instances of antagonism to unions and by the company's policy of accepting the wage scale of its competitors which has actually been set by unionized companies through negotiation with the United Mine Workers, while refusing to deal in any way with the miners' union.

The report credits the company with a much more liberal attitude toward unionism since the employees' representation plan was introduced, but adds that a conflict is in existence in Colorado between employees' representation and trade unionism, which must be dealt with before any plan can be made to work satisfactorily. Exponents of employees' representation in a highly unionized industry like bituminous coal," in the opinion of Miss Van Kleeck, "must recognize that questions of wages and hours should be settled by agreements which are not limited to a single company but include the industry as a whole if the idea of labor's partnership is to be made practical."

"There is in this situation" declare the Foundation's investigators, "an opportunity for a piece of constructive statesmanship on the part of Mr. Rockefeller and his associates which will have widespread influence upon the further development of employees' representation in industry generally throughout the country. This is nothing less than to undertake the task which he himself predicted would be necessary for the ultimate development of employees' representation, namely, to devise some method of extending it to include all companies in an industry, and through conference to determine just what part labor organizations and employers' associations can best take in such a plan."

The concluding chapter of the report says: "This particular plan has had so much publicity and has been copied so widely that it presents definitely a challenge to the trade union movement; it must be considered by the unions on its merits, and not ruthlessly condemned as their natural enemy. The United Mine Workers openly and bitterly denounce the Rockefeller plan. The Colorado Fuel and Iron Company, in the words of its general manager, sees numerous good reasons for not signing a contract with the union. No fruitful discussion between these two groups would be possible unless each approached it with the will not to press the solution of its own group for acceptance, but rather to think first of the needs of the man in the mines and then to work out the agreement which will best meet those human needs. From this would follow, we are confident, a spirit and method of managing the industry which would better serve also the public interest."

The report, entitled "Employes' Representation in Coal Mines," was prepared by Ben M. Selekman, of the Sage Foundation's Department of Industrial Studies, and Miss Van Kleeck, both of whom spent considerable time in the many mines and camps of the Colorado Fuel and Iron Company, and had repeated conferences with individual miners, groups of miners, mine foremen, superintendents, officials of the

company, and John D. Rockefeller, Jr., the principal stockholder. The operation of the Industrial Representation Plan in the steel mills of the Colorado Fuel and Iron Company was made the subject of a separate investigation by the Foundation, and the report of this study shows that the company has been in advance of other companies in the steel industry in its dealings with employees.

The success of employees' representation in industry, through which approximately 800 companies are now attempting to solve their labor problems, depends largely on the ability of employers to understand the point of view of wage-earners, to secure their coöperation, and to develop leadership among them. While the Russell Sage report is based on a five-year study of employees' representation in the coal mines of the Colorado Fuel and Iron Company, it is pointed out that the analysis of the relations between employer and employee in this industry is true also of the railroads, the packing industry, the textile industry, and other important branches of American business.

"Our studies of wage-earners' participation in management, not only in the Rockefeller properties in Colorado but in other industries," declared Mary Van Kleeck, Director of the Department of Industrial Studies, in making the report public, "have convinced us that primary attention must be given to the views of the wage-earners and that it is very important for the owner of an industry to find out how his workmen feel about such a plan and not to rely solely upon statements about the employees' attitude from managing officials. The success of any plan of employees' representation in industry depends on the confidence and coöperation of the employees, and on the willingness and ability of local officials to carry out the ideas of the owners. To ignore this and to permit a plan to go on for years without stimulating genuine leadership among the wage-earners is to build on an illusion."

The report points out that though the labor situation in the mines of the Colorado Fuel and Iron Company is much more satisfactory than before the employees' representation plan was introduced ten years ago, there have, nevertheless, been three strikes among the miners of this company since the introduction of this plan, and that during one of these strikes state troops were kept in the vicinity of the mines for several months. The report reveals other instances of antagonism between the company and its employees. Thus, in all the camps the miners were prevented from holding union meetings in the buildings of the local Y. M. C. A., a majority of whose board of directors were officials of the Colorado Fuel and Iron Company. And in one camp when the miners attempted to rent the only other available public hall—a dancing pavilion—for union meetings, the company, to prevent its use for this purpose, bought the pavilion and razed it to the ground.

The report attributes the partial failure of the employees' representation plan in the mines of the Colorado Fuel and Iron Company to the local officials of the company rather than to John D. Rockefeller, Jr., who personally introduced the plan. The Foundation's investigators report that although the employees' representation plan limits the power of discharge—the abuse of which by foremen and superintendents caused many of the labor difficulties of earlier years—foremen and superintendents have to be trained and carefully supervised in carrying out a policy which involves changes in their traditional attitude.

Speaking of industry at large, the Foundation's investigators say: "Local rather than national organization of employees is exactly what is desired by many employers; some of these welcome employees' representation because they see only that phase of it which limits its activities to employees within a single company, and they believe it offers an escape from their difficulties with trade unions. Organizers and union officials irritate them, and many are the charges of arrogance and lack of responsibility or efficiency which employers heap upon the leaders of unions. Some of the criticisms are well-deserved; some are the natural result of the constant opposition of employers to unionism;

some are merely efforts to justify irritation which a manager feels in being obliged to make concessions to the demands of labor. On the other hand, the men feel that a national organization alone has the power to protect them in a conflict with their employers.

"It is foolish to deny a divergence of interest between employers and employees. Every dispute over wages illustrates it. The need is to establish some means of adjusting these divergent claims without the wasteful conflict by which the power of each side is tested and the issue decided in favor of the stronger."

Copies of the report may be secured at the Russell Sage Foundation, 130 E. 22d Street, New York City.

JOSEPH A. HOLMES SAFETY ASSOCIATION

Personnel Research Federation was represented at the annual meeting of the Joseph A. Holmes Safety Association in Washington, on March 5th, by Mr. Edgar Wallace. Dr. T. T. Read, Chief of the Mine Safety Department of the United States Bureau of Mines, was made Permanent Secretary of the Association. Director H. Foster Bain was reëlected President. Mr. Galbraith, representing the American Mining Congress, and Mr. William Green, representing the American Federation of Labor, are the Vice-Presidents.

TO STABILIZE CONSTRUCTION

At the meeting of the American Construction Council in New York on May 9th and 10th, one session will be devoted to the subject of elimination of construction peaks and depressions. The reduction of seasonal inactivity in the building industry is of vital interest to thousands of workers as well as to the public which pays for the wastes due to the present fluctuations.

PROGRESS OF THE ENGINEERING INVESTIGATION

Sixty per cent of the students who enter engineering schools never graduate. Of these, more than half are eliminated because of failure in scholastic work, according to a progress report recently published from the office of the Director of Investigation of the Society for the Promotion of Engineering Education.[1]

The report describes current methods of admission and the quality of high school preparation. Fifty-five per cent of engineering students choose this career before entering the fourth year of high school. Eighty per cent choose a particular field and course in engineering before entering college, and few change their selection later. Nevertheless, more than half of the freshmen are unable to give a clear statement as to the scope of engineering and the work of an engineer, nor do they have any adequate conception of the particular field of engineering which they have decided to enter. "That there is a great need for sound advice to high school students in choosing careers is obvious."

More complete reports will be presented at the annual convention of the Society at Schenectady, June 17 to 20, 1925.

STUDENT PERSONNEL SERVICE AT WEST VIRGINIA

West Virginia University has been making progress in the personal, educational, and occupational guidance of students. In 1922 a Dean of Men was added to the Administrative Staff of the University. In 1923 intelligence tests were given for the first time to all freshmen, and personnel records were filled out in the office of Dean of Men, Harry E. Stone. Freshman guidance conferences for all men have been conducted this year by Dean Stone. They have dealt with the regulations of the University, health, social hygiene, habits of study, intelligence tests, opportunities and requirements in law, medicine and other occupations, the social sciences, the biological sciences, and other topics relating to the welfare of students. A direct attack on the problem of vocational guidance of

[1] H. P. Hammond. The Preparation, Admission, and Elimination of Engineering Students. Journal of Engineering Education, March, 1925, Vol. 15, pp. 498–508.

college men has resulted in the preparation and distribution of a number of occupational leaflets giving facts rather than advice concerning occupations open to those who receive college and university training.

COURSES IN PERSONNEL SERVICE AT NEW YORK UNIVERSITY

Dr. Anna Y. Reed, Associate Professor of Education in New York University, will have next year the title of Professor of Personnel Administration in Education. She will offer in the Summer School, as well as during the academic year, courses in the History and Present Status of the Personnel Movement and in Occupational Counseling, and a course for Deans and Advisers of Men and Women. Dr. Reed will also supervise research in personnel problems and will continue her service to schools and communities as lecturer and investigator under the auspices of the National Junior Personnel Service, of which she is the Managing Director

AMERICAN COUNCIL ON EDUCATION EIGHTH ANNUAL MEETING

Among the topics on the program of the annual meeting of the American Council on Education in Washington May 1st and 2nd, were the following:

The Personnel Register, Chancellor S. P. Capen.

Conference on Academic Freedom and Tenure, Dr. C. R. Mann.

The Committee on Standards concerning Certificates, Terminology and Standards of Achievement, President James H. Kirkland, Chairman.

Psychological Examinations for Freshmen, Dr. L. L. Thurstone.

The Advisory Council on Student Personnel Procedure, Dean H. E. Hawkes, Chairman.

The Committee on Franco-American Exchange, Miss Virginia Newcomb, Chairman.

The Commonwealth Fund Fellowships, Mr. Max Farrand.

The John Simon Guggenheim Memorial Foundation, Mr. Henry Allen Moe, Secretary.

PERSONAL ITEMS

Henry B. Elkind, M.D., has been made Medical Director of the Massachusetts Society for Mental Hygiene in place of Dr. George K. Pratt, who has joined the staff of the National Committee for Mental Hygiene. Dr. Elkind has been engaged in research on problems of mental hygiene in industry while carrying forward his graduate studies in the Harvard School of Public Health.